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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,755	07/20/2005	Taro Suzuki	330-302	1935

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EXAMINER

LOEWE, ROBERT S

ART UNIT	PAPER NUMBER
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4134

MAIL DATE	DELIVERY MODE
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10/18/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/538,755	Applicant(s) SUZUKI ET AL.	
	Examiner Robert Loewe	Art Unit 4134	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/25/06; 6/10/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 16 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, claim 16 is confusing. The phrase “at a temperature that is higher than the temperature which is lower than a decomposition temperature...and that is less than the decomposition temperature of the organic group” makes it difficult to determine exactly what temperature(s) are used in this preliminary calcining step. For purposes of examination, this preliminary calcining temperature is interpreted to be any temperature below the decomposition of the organic group by 150 °C or more below said decomposition temperature. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 1-4, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Ishikubo et al. (JP-2000-204168). For convenience, the machine-translated version of this document will be relied upon.

Claims 1-3: Ishikubo et al. teaches a method for producing polyorganosiloxane particles, which comprises hydrolyzing and condensing methyltrimethoxysilane in the presence of a basic catalyst (ammonia) to form seed polyorganosiloxane particles, followed by mixing said seed polyorganosiloxane particles with a particle-diameter-growing aqueous solution containing methyltrimethoxysilane to grow said seed particles (paragraphs 0074-0077). Ishikubo et al. further inherently teaches that the amount of ammonia catalyst is between 0.7 to 6.5 mass ppm (paragraph 0075). Specifically, 2.70 g of aqueous ammonia/total mass of reactants is about 14965 g equals 0.00018% ammonia by mass, or 1.8 ppm.

Claim 4: Ishikubo et al. further teaches that the polyorganosiloxane particles have an average particle diameter of over 10 microns and whose coefficient of variation (CV value) is 5% or less (paragraph 0016).

Claim 16, in its current form, is broad enough in that simply placing room-temperature polysiloxane into a furnace which has been preheated to a temperature above the decomposition temperature of the organic groups writes on the claim as written. In other words heating a polysiloxane particle from 22 °C to 1000 °C, will involve a region where the polysiloxane temperature is at a temperature below the decomposition temperature of the organic groups by 150 °C or more. Ishikubo et al. teaches placing the organopolysiloxane into a furnace at 1000 °C for 1 h, which anticipates the limitations of instant claim 16 (paragraph 0081).

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Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikubo et al. (JP-2000-204168). For convenience, the English language machine-translated version of this document will be relied upon.

Claims 5 and 6: Ishikubo et al. teaches a method for producing polyorganosiloxane particles, which comprises hydrolyzing and condensing methyltrimethoxysilane in the presence of a basic catalyst (ammonia) to form seed polyorganosiloxane particles, followed by mixing said seed polyorganosiloxane particles with a particle-diameter-growing aqueous solution containing methyltrimethoxysilane to grow said seed particles (paragraphs 0074-0077).

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Ishikubo et al. does not teach that the seed particles are measured for diameters continuously or at intervals of a constant time period and the reaction is terminated when an intended particle diameter is reached. However, Official Notice is taken that it is well-known to monitor reaction variables in a continuous or discontinuous manner (e.g., in fixed time intervals. It is also well known to terminate such reactions when the desired reaction variable is met. For example, reaction parameters such as temperature, pressure, pH, or IR characteristics can be monitored in real-time. It follows that a person having ordinary skill in the art would know when to stop a reaction when a desired reaction parameter has been met.

Ishikubo et al. also does not teach that reaction aliquots are withdrawn from the reaction mixture and sampled to determine the particle size. However, Official Notice is taken that it is well known when monitoring a reaction parameter (such as disappearance of starting material, monitoring a reaction product mixture, appearance of product, etc.) a person having ordinary skill in the art would know to remove an aliquot from the reaction mixture and subject that aliquot for analysis to determine the reaction composition. A person of ordinary skill would further be motivated to remove aliquots from the reaction mixtures in order to ascertain the behavior of the reaction, determine if any side products are being produced, and to determine when to quench/cease the reaction.

Claim 7: Ishikubo et al. implicitly teaches that the polyorganosiloxane particles are polymethylsilsesquioxane particles (paragraphs 0074-0077). Since Ishikubo et al. teaches the same process of instant claim 5, it follows that the resultant composition of the polyorganosiloxane particles be the same.

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Claim 8: Ishikubo et al. teaches that the addition rate of the particle-diameter-growing aqueous solution to the seed-particles-containing solution is 0.01 mL/minute per milliliter of seed-particles-containing solution (paragraph 0077).

Claim 9: Ishikubo et al. teaches that the polyorganosiloxane particles have a particle diameter of 1 to 30 microns and a coefficient of variation of 3% or less (paragraph 0016 and Table 1, entries 1-5).

Claims 10 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikubo et al. (JP-2000-204168). For convenience, the machine-translated version of this document will be relied upon.

Claim 10: Ishikubo et al. teaches a method for producing polyorganosiloxane particles, which comprises hydrolyzing and condensing methyltrimethoxysilane in the presence of a basic catalyst (ammonia) to form seed polyorganosiloxane particles, followed by mixing said seed polyorganosiloxane particles with a particle-diameter-growing aqueous solution containing methyltrimethoxysilane to grow said seed particles (paragraphs 0074-0077). Ishikubo et al. further teaches that the amount of surfactant added satisfies the relationship of expression (II) of instant claim 10 (paragraphs 0074-0077). Specifically, expression II is as follows:

$$Y = \alpha[(aX)/(AR)]$$

Ishikubo paragraphs 0074-0077: $Y = 0.001\%$; $a = 0.49$; $X = 1,500$ g; $A = 14,677$ g; $R = 5.2$ microns, therefore $\alpha = 9.6$, which falls within the range of α for instant claim 10

Claim 15: Ishikubo et al. further teaches that the polyorganosiloxane particles have an average diameter of over 10 microns (paragraph 0016).

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Claim 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikubo et al. (JP-2000-204168) as applied to claim 10 above, further in view of Fujino (JP-2002-038049). For convenience, the machine-translated version of both documents will be relied upon.

Ishikubo et al. teaches the process of preparing polyorganosilicon particles of instant claim 10, as shown above, as well as the HLB value of 15 to 40, as evidenced by Fujino, as shown above. Ishikubo et al. further teaches that sodium octylnaphthalene sulfonate (an alkylaryl sulfonate) is employed as the anionic surfactant (paragraph 0075). Ishikubo et al. does not explicitly teach that the anionic surfactant is a higher sulfuric ester salt such as sodium dodecyl sulfate, or that the anionic surfactant has an HLB value of 15 to 40. However, Fujino teaches that alkylaryl sulfonates, such as sodium dodecyl sulfate, have HLB values from 18-42 (paragraph 0030). Ishikubo et al. and Fujino are combinable because they are from the same field of endeavor, namely, polyorganosilicon particles. At the time of invention, a person having ordinary skill in the art would have found it obvious to employ sodium dodecyl sulfate as taught by Fujino as an anionic surfactant in the process taught by Ishikubo et al. and would have been motivated to do so since sodium dodecyl sulfate is readily available, cost effective, and a well-studied surfactant. A person having ordinary skill in the art would highly consider sodium dodecyl sulfate as a candidate when needing an anionic surfactant.

Claim 14: Ishikubo et al. teaches a method of forming seed particles where a separately prepared solution containing polyorganosilane particles is added to a reaction system containing the silicon compound, and the silicon compound is caused to undergo hydrolysis and

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condensation in the presence of the polyorganosiloxane particles, to form the seed particles (paragraphs 0074-0077).

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Loewe whose telephone number is (571) 270-3298. The examiner can normally be reached on Monday through Friday from 9:30 AM to 7:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571) 272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RSL
17-August-2007


MARK EASHOO, PH.D.
SUPERVISORY PATENT EXAMINER

12/02/07